

What is Claimed is:

1. A method of manufacturing a master disc for a magnetic disc, comprising the steps of:
providing a substrate;
forming an SiO₂ film on the surface of the substrate;
etching the SiO₂ film to form a magnetic pattern on the surface of the substrate;
etching the substrate using the SiO₂ film as a mask to form grooves corresponding to the magnetic pattern;
forming a magnetic film on the surface of the substrate to fill the grooves and cover the SiO₂ film; and
polishing the soft magnetic film to expose the surface of the SiO₂ film,
wherein the SiO₂ film acts as a polishing stopper.
2. A method according to claim 1, wherein the substrate is a silicon substrate.
3. A method according to claim 2, further including the steps of forming a photoresist film on the SiO₂ film, patterning the photoresist film, and developing the photoresist film to form a photoresist mask for etching the SiO₂ film.
4. A method according to claim 3, wherein the SiO₂ film is etched under a mixed gas atmosphere containing CHF₃ and oxygen using the photoresist as a mask.
5. A method according to claim 4, wherein the substrate is etched under an SF₆ gas atmosphere to form the grooves having a depth of about 0.5μm.
6. A method according to claim 5, wherein the magnetic film of about 1μm is deposited on the substrate by sputtering to fill the grooves and cover the SiO₂ film.
7. A method according to claim 6, wherein the SiO₂ film having a thickness ranging 0.1 to 0.2μm is formed on the surface of the substrate by thermal oxidation.

8. A method according to claim 1, wherein each of the grooves has a width not greater than about 0.5 μ m.
9. A master disc formed according to the method of claim 1.
10. A master disc for a magnetic disc, comprising:
a substrate having grooves corresponding to a magnetic pattern;
an SiO₂ film on the surface of the substrate, the SiO₂ film having channels corresponding to the magnetic pattern and aligned with the grooves of the substrate; and
a magnetic material filling the grooves and the channels.
11. A master disc according to claim 10, wherein the substrate is a silicon substrate.
12. A master disc according to claim 10, wherein each of the grooves is about 0.5 μ m deep.
13. A master disc according to claim 10, wherein the SiO₂ film has a thickness ranging 0.1 to 0.2 μ m.
14. A master disc according to claim 10, wherein each of the grooves has a width not greater than about 0.5 μ m.